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Effects of Conditioning Regimes on Blood Parameters of Endurance Horses under Malaysian Condition

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Abstract

Endurance conditioning program will increase fitness level in horses. Twenty-six endurance horses, which were registered to be compete in endurance race were selected to evaluate the soundness and blood parameters of the horses in training prior to the competition. The Fitness levels of these endurance horses from establishments practicing different conditioning regime were evaluated after a 6-weeks of conditioning period. Standardized exercise test was carried out for all horses prior and after conditioning. Three sets of blood samples were taken from each horse, i.e. preride, immediate postride and 30 min after ride. All horses were trained at a distance of 35 km, on the same track and at the same time each day. Heart rates were monitored and blood samples were obtained throughout the exercise test, blood samples were then processed and analyzed for biochemistry components, i.e. electrolytes concentration like Ca, P, Na, K, Cl, and muscle enzymes including aspartate aminotransferase, creatine kinase and lactate. Paired sample t-test were performed to evaluate the effects of different conditioning program on these physiological variables. In this study, by the significant changes in most blood parameters, it indicated that different conditioning regimes induced improvements of physiological responses in horses to variable degree. The minimal release of muscle enzymes and little loss of water and electrolytes were reflected by the changes in blood parameters. Although elevations in serum muscle enzymes and lactate were significant, this is believed to be a normal physiological responses of horses towards training without noticeable muscle injuries and/or metabolic acidosis.

Keywords: Endurance horse, conditioning regime, biochemistry, performance